12-14-2020

Designing an IT Artefact to Enable a Sustainable Business Model for a Bio-Energy Program: Case of a Briquette Ecosystem

Gaurav Dixit
Indian Institute of Technology Roorkee, gauravdixit.fdm@gmail.com

TREO
Technology, Research, Education, Opinion

Designing an IT Artefact to Enable a Sustainable Business Model for a Bio-Energy Program: Case of a Briquette Ecosystem

Gaurav Dixit
Indian Institute of Technology Roorkee
gaurav.dixit@ms.iitr.ac.in

Abstract

Traditional design science research views designing artefact as a problem-solving mechanism (Hevner et al., 2004). However, advances in digital technologies and frameworks have forced Information Systems (IS) researchers to look for alternative logics of design to address the emerging nature of design artefact. They have challenged the controlled space of a workplace where the traditional view of design as a problem-solving activity is performed (Sein et al., 2011; Spagnoletti et al., 2015). For example, Spagnoletti et al. (2015) explored design as a socio-technical construction of digitally enabled elderly support networks using action design research. My research idea explores an alternative view of design as an immersed process of conscious reflection and learning, in contrast to the traditional view of systems design as a problem-solving tool. I focus on an innovative approach to the design of an ICT-based briquette ecosystem which enables a socio-business model. This study is part of an ongoing research initiative on the production of pine needle briquettes in Uttarakhand State of India, which is shaped by the technological innovation of a portable manually operated bio-briquette machine. This machine produces bio-briquettes that can be used as a greener and environment-friendly energy substitute. This study provides the contextual backdrop illustrating the ensemble artefact, design principles, and the integrated socio-business model. These contributions lead to implications for both researcher and practitioner communities.
Further, I illustrate how the design of ICT-based briquette ecosystem challenge traditional organizational boundaries and transform societal actors into organized stakeholders. Based on the insights gained, I observe that the design of ICT-based briquette ecosystem can be generalized and used to design and implement other sustainability initiatives leading to the construction of socio-economic-technological artefacts. I hope to share my experience of the ongoing development of this research idea with conference participants for their feedback.

Funding Source
National Mission on Himalayan Studies (NMHS), Grant no: GBPNI/NMHS-2018-19/MG 3

References

Hevner, A.R., March, S.T., Park, J., and Ram, S. (2004). “Design science in information systems research.” *MIS Quarterly* 28 (1), 75–105.
Sein, M.K., Henfridsson, O., Purao, S., Rossi, M., Lindgren, R., 2011. Action design research. MIS Quarterly 35 (1), 37–56.
Spagnoletti, P., Resca, A., and Sæbø, Ø. (2015). “Design for social media engagement: insights from elderly care assistance.” The Journal of Strategic Information Systems 24(2), 128-145.